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Engineering Statement

Construction Permit Application for Minor Modification
KSBO-CD
San Luis Obispo, CA
FCC Facility ID # 31354
RF Channel 36

November 23, 2020

This Engineering Statement has been prepared on behalf of HC2 Station Group, Inc. (HC2), licensee of Class A Digital Low Power Station KSBO-CD at San Luis Obispo, CA. The statement was prepared in support of a Construction Permit Application for changes to the facility as described below.

The station currently operates on channel 36 and is proposing to change its antenna make and model as well as antenna pattern and raise its effective radiated power (ERP) at its transmitter existing site. Therefore, HC2 is filing a construction permit application seeking authorization to construct facilities utilizing the new parameters as listed below.

The parameters of the proposed facility are as follows:

Proposed Parameters:

Transmitter Location:	35-21-39.4 N 120-39-25.0 W (NAD 83)
Channel:	36
ERP:	15.0 KW
Emission Mask:	Full Service
Antenna Pattern:	Omnidirectional
Antenna Manufacturer:	Dielectric
Antenna Model:	TUA-O4
Antenna RCAGL:	23.7 Meters
Overall Structure AGL:	60.7 Meters
RCAMSL	770.5 Meters

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Interference Study:

An interference study was undertaken utilizing the FCC's TVStudy program to analyze the co-channel and adjacent channel interference scenarios for the proposed facility parameters.

It is requested that processing of the application utilize the following parameters for processing and TVStudy analysis:

Study Cell Size:	1.0 KM
Profile Point Spacing:	0.10 KM

The results of the study indicated that no impermissible interference to other stations would result from the proposed operations.

Based upon the forgoing interference study, it is believed that the proposed facility can operate without any impermissible interference to other stations.

To the extent that the proposed facility would receive interference from other stations, the licensee will agree to accept the incoming interference that results from its proposal.

RF Exposure Study:

Furthermore, a study was conducted to determine compliance with the RF Radiation Maximum Permissible Exposure (MPE) limits of the proposed operation. The study was conducted using the methodology outlined in the FCC's OET Bulletin 65 regarding RF Radiation Compliance.

The study utilized the proposed antenna height of 23.7 meters above ground level and a reference height of 2 meters above the ground for the reference location. This yields a distance from the antenna of 21.7 meters.

The proposed antenna elevation pattern indicates that the downward radiation from the antenna from 45° to 90° below horizontal has a maximum relative field value of 0.10. This value was used in conjunction with the distance from the antenna and the prescribed formula from OET Bulletin 65 to determine a maximum predicted power density of 106.4μW/cm² at 2 meters above the ground level near the base of the antenna support tower. Since the antenna is located within a fenced and locked compound it qualifies as a controlled environment and is only accessed by persons having an occupational necessity for access to the area. Hence, the Maximum Permissible Exposure Level (MPE) for the Controlled/Occupational environment for Channel 36 is approximately 2,016.7μW/cm².

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Thus, the proposal is approximately 5.3% of the Controlled Environment/Occupational MPE level. Hence, the proposal is within the allowable MPE limits.

Because the antenna is located in a locked and fenced compound with other communications electronics, it is believed that no access by the general public or access by persons not having occupational RF safety training will be possible. Further, the licensee will post signage as appropriate on the fenced compound regarding the RF compliance procedures.

Finally, the licensee will engage the services of an RF Engineer to complete a comprehensive evaluation and measurements of site and those areas near the base of the antenna to ensure compliance with the MPE limits.

Based upon the forgoing it is believed that the proposed facility is in compliance with the required RF exposure limits.

The licensee and all station personnel and contractors are required to follow appropriate safety procedures before the commencement of any work on the rooftop or in close proximity to the antenna. These procedures including reducing power or turning off the transmitter before any work is undertaken at the site. The licensee in coordination with any other users of the site must reduce power or cease operations as necessary to ensure workers having access to the site, tower, and antenna locations are not exposed to RF Radiation levels in excess of those prescribed by FCC Guidelines.

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